

## METHOD AND APPARATUS FOR GRAMMATICAL PACKET CLASSIFIER

### ABSTRACT OF THE DISCLOSURE

A packet classification language (GPCL) is provided to specify protocol hierarchies among data packets in a routing device. The GPCL uses regular expressions to match incoming data packets and a syntax to describe the protocol hierarchy. A GPCL compiler produces an enhanced DFA which incorporates the regular expression for recognizing constituent parts of a data packets and which incorporates the grammar graph defining the relationships among the constituent parts. A hardware implemented DFA is used to scan the input stream which constitutes the data packets.

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